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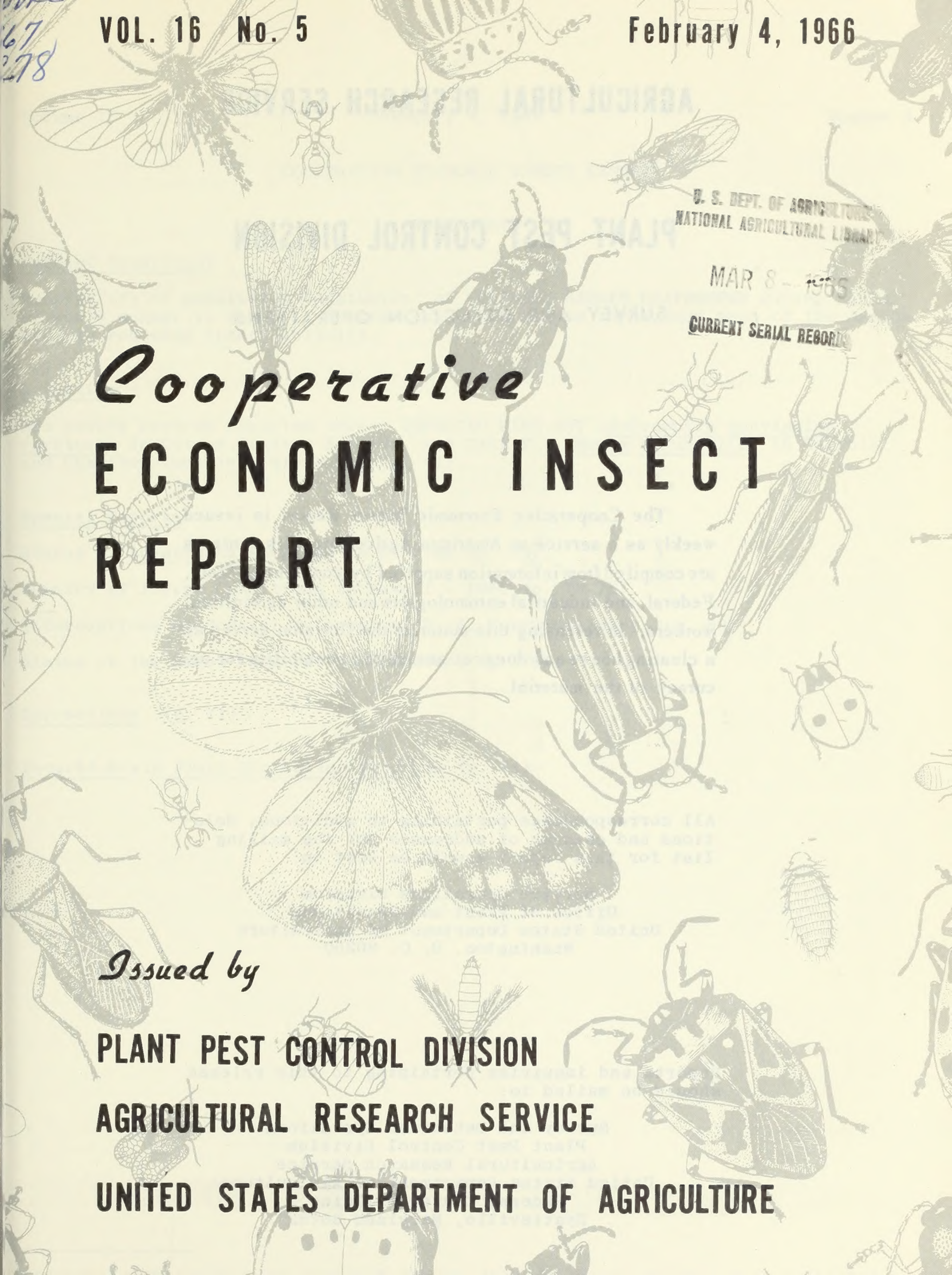

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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United States Department of Agriculture
Federal Center Building
Hyattsville, Maryland 20782

Volume 16 February 4, 1966 Number 5

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

Possibility of population "explosion" of SOUTHERN GARDEN LEAFHOPPER during spring or early summer in Hawaii. Subfreezing temperatures throughout much of the Nation greatly reducing insect activity.

Detection

New county records reported were: IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) in Citrus County, Florida, and FACE FLY (*Musca autumnalis*) in Carroll and Chariton Counties, Missouri. (p. 71).

Special Reports

Status of *Anastrepha suspensa* in Florida (p. 72).

Summary of Insect Conditions in Hawaii - 1965 (p. 73-76).

Interceptions of Special Interest at U. S. Ports of Entry. (p. 59).

Status of the Screw-worm in the Southwest (p. 70).

Corrections (p. 71).

Federal-State Plant Protection Programs (p. 71).

Reports in this issue are for week ending January 28 unless otherwise indicated.

WEATHER OF THE WEEK ENDING JANUARY 31

HIGHLIGHTS: (1) Continued very cold east of Rockies, warmer West. (2) Severe blizzard hits East; delayed publication of this bulletin as government offices were closed on Monday.

TEMPERATURE: Very cold weather moved into its third week in the Central and East with average temperatures 15° to 25° below normal over very large areas. Mountain locations in North Carolina reported -29°; Tupelo, Mississippi, -5°; and Pensicola, Florida, 9°. In Florida, freezing temperatures reached the extreme south and temperatures were in the low 20's in central areas early Monday, January 31. On Friday the maximum temperature at International Falls, Minnesota, was -26° and Knoxville, Tennessee, had a Sunday high of 2°. Meanwhile, Pacific air moved into the western third of the Nation bringing clouds, light precipitation, and average temperatures of 3° to 6° above normal at many points.

STORM: One of the worst blizzard storms in two-thirds of a century struck the Appalachians and East Coastal areas during January 29-31. As a low center over the northeastern gulf coast early Saturday moved to the Carolina coast and thence to Delaware, pressure dropped rapidly to 976 millibars; further movement took the center to a point south of Quebec by early Monday. In Virginia and West Virginia snowfall was 12 to 20 inches with winds 34 to 40 mph; in northern Pennsylvania and upstate New York, winds were 35 to 50 mph, with snowfall 20 to 40 inches. Travel and most normal activities came to a hault throughout the affected area. Snowfall was lighter and winds were less strong in the Hudson Valley, New Jersey, and most of New England. Exact comparisons are difficult but storms of comparable intensity occurred in March 1920 and February 1899. Both storms were more intense in coastal areas but probably less severe further inland. The famous blizzard of March 1888 was also worse in coastal areas but the current storm may have been worse at interior locations.

PRECIPITATION: This was the fourth week with substantial amounts in the Southeast and the second week with beneficial falls in the Northeast drought area. Weekly totals were near 2 inches on the gulf coast and from Jacksonville to Delaware along the coast. Moderate falls returned to the Pacific Coast with 0.9 inches as far south as Los Angeles, California. Only light amounts fell from the Sierras to Texas and from the Cascades to the Great Lakes and Ohio.

SNOW COVER: The coldest weather of many years found agricultural areas protected by snow cover over most of the Great Plains, the Great Lakes area, and Northeast. Parts of the cornbelt were bare but snow covered Arkansas and most of the Ohio and Tennessee River Valleys at weekend. Snow accumulations continued to be normal or above throughout most western mountain areas. Plans for a big weekend at all eastern ski resorts were complicated as travel became impossible on Sunday. (Summary supplied by U. S. Weather Bureau).

CEREAL AND FORAGE INSECTS

GREENBUG (Schizaphis graninum) - ARKANSAS - Rather common but not high. Limited survey indicates decline. (Ark. Ins. Sur.). OKLAHOMA - Averaged less than 1 per linear foot in wheat in Perkins area, Payne County; averaged 400 per linear foot in area 2 weeks ago but cold weather killed most. Ranged 10-15 per linear foot in wheat in Garfield County. (Okla. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum avenae) - ARKANSAS - Numbers fairly low; probably declined with cold weather. (Ark. Ins. Sur.).

PEA APHID (Acyrthosiphum pisum) - ARKANSAS - Numbers low, about 1-2 per square foot in vetch. (Ark. Ins. Sur.).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARKANSAS - None found in limited surveys January 27. (Ark. Ins. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Light (10-15 per linear foot) in wheat checked in Garfield County. (Okla. Coop. Sur.).

AN APHID (Rhopalosiphum padi) - OKLAHOMA - Ranged 10-20 per linear foot in wheat in Garfield County. (Okla. Coop. Sur.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARKANSAS - First small larvae of season found January 27 in vetch; numbers low. (Ark. Ins. Sur.).

A GRASSHOPPER (Schistocerca vaga) - HAWAII - One female from slender mimosa (Desmanthus virgatus) caught in Nanakuli area, Oahu, during survey to determine range of this potential agricultural pest. Distance from original infestation on Sand Island to Nanakuli is 15 miles. (Hawaii Ins. Rpt.).

FRUIT INSECTS

CITRUS RUST MITE (Phyllocoptruta oleivora) - FLORIDA - Moderate damage to orange leaves at Thonotosassa, Hillsborough County. (Simmons, Jan. 12).

FULLER ROSE BEETLE (Pantomorus godmani) - HAWAII - Causing heavy damage to plum and peach foliage in Waimea. (Hawaii Ins. Rpt.).

TRUCK CROP INSECTS

SOUTHERN GARDEN LEAFHOPPER (Empoasca solana) - HAWAII - Light on spiny amaranth, cowpeas, beans and peanuts in Poipu, Hanapepe and Waimea, Kauai. High in bean plantings at Makaweli and Waimea, Kauai. Wild hosts supported populations of 5-18 per sweep. Mostly nymphs on spiny amaranth. Possibility of population "explosion" in spring or early summer. (Hawaii Ins. Rpt.).

CABBAGE APHID (Brevicoryne brassicae) - HAWAII - This and Pieris rapae (imported cabbageworm), light on broccoli throughout Maui from sea level to 4,000 feet. (Hawaii Ins. Rpt.).

HAWAIIAN BEET WEBWORM (Hymenia recurvalis) - HAWAII - Adults heavy on a weed host (Amaranthus spinosus) in cattle grazing area in Kawaihae. (Hawaii Ins. Rpt.).

A GRASSHOPPER (Atractomorpha ambigua) - HAWAII - Caused moderate to heavy damage to mustard cabbage on Maui. (Hawaii Ins. Rpt.).

A SPIDER MITE (Tetranychus sp.) - HAWAII - Heavy on various garden and commercial crops including potatoes, beans and peppers in Kalaheo and Hanapepe, Kauai. (Hawaii Ins. Rpt.).

SPOTTED GARDEN SLUG (Limax maximus) - HAWAII - Caused moderate damage to cabbage especially at 2,000 to 4,000 feet elevation on island of Maui. (Hawaii Ins. Rpt.).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

FULLER ROSE BEETLE (Pantomorus godmani) - HAWAII - Caused moderate damage to leaves and flowers of rose and petals of wild daisies in Waikii, Hawaii. Heavy damage to foliage of willow and rose at Kamuela Inn, Waimea, Hawaii, and moderate damage on Acacia koaia at Kawaihae-uka, Hawaii. (Hawaii Ins. Rpt.).

CHINESE ROSE BEETLE (Adoretus sinicus) - HAWAII - Older leaves of noni (Morinda citrifolia) heavily defoliated by adults at City of Refuge National Park, Hawaii. (Hawaii Ins. Rpt.).

PLATYPOTID BEETLES (Platypus spp.) - FLORIDA - P. compositus and P. flavicornis severely damaged stem of southern magnolia trees in nursery at Glen St. Mary, Baker County. (Collins, Jan. 6).

NATIVE HOLLY LEAF MINER (Phytomyza ilicicola) - MARYLAND - Heavy in American holly on 3 properties in Prince Georges County. (U. Md., Ent. Dept.).

BOXWOOD LEAF MINER (Monarthropalpus buxi) - MARYLAND - Heavy in several boxwood shrubs at Glyndon, Baltimore County. (U. Md., Ent. Dept.).

COCONUT LEAF ROLLER (Hedylepta blackburni) - HAWAII - Larvae heavy on coconut fronds during latter part of 1965 at Mauna Kea Beach Hotel in Kawaihae, Hawaii, subsided. (Hawaii Ins. Rpt.).

A PLATASPID BUG (Coptosoma xanthogramma) - HAWAII - This recently discovered bug light on jade-vine in Pauoa and Pacific Heights area of Honolulu, Oahu. (Hawaii Ins. Rpt.).

GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) - HAWAII - Heavy on noni at City of Refuge National Park, Hawaii. (Hawaii Ins. Rpt.).

A FALSE SPIDER MITE (Tenuipalpus pacificus) - FLORIDA - Caused moderate to severe damage on leaves of 380 orchid seedlings at Homestead, Dade County. (Knowles, Jan. 21).

INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (Hypoderma lineatum) - OKLAHOMA - Heavy on cattle in Cotton County; light in Choctaw County. (Okla. Coop. Sur.).

CATTLE LICE - OKLAHOMA - Several species heavy on cattle in Choctaw County. (Okla. Coop. Sur.). ALABAMA - Both biting and sucking lice heavier than usual on cattle in Shelby County. Infestations quite irritating. (Clark).

POULTRY MITES - OKLAHOMA - Heavy on poultry in Choctaw County. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

A SUBTERRANEAN TERMITE (Reticulitermes tibialis) - OKLAHOMA - Swarming in basement in Tulsa, Tulsa County. (Okla. Coop. Sur.).

STORED-PRODUCT INSECTS

CIGARETTE BEETLE (Lasioderma serricorne) - ALABAMA - Heavy in cottonseed meal cake; fumigated to bring adults and larvae under control at warehouse in Atmore, Escambia County. (Lemons).

POTATO TUBERWORM (Phthorimaea operculella) - MARYLAND - Heavy in farm-stored potatoes in Talbot County. (U. Md., Ent. Dept.).

BENEFICIAL INSECTS

A NOCTUID MOTH (Hypena strigata) - HAWAII - Extremely active on Lantana camara var. aculeata in many areas of State; moderately heavy foliar damage on thousands of plants on island of Hawaii noted at Kilauea Volcanoes National Park, Puuanahulu, Halepiula, and from Waiohinu to Kukui Paddock, Kau District. (Hawaii Ins. Rpt.).

A CERAMBYCID BEETLE (Archlagocheirus funestus) - HAWAII - Larvae causing severe damage to acres of prickly pear cactus at Kawaihae-uka, Hawaii. Many plants toppled to ground. (Hawaii Ins. Rpt.).

INTERCEPTIONS OF SPECIAL INTEREST AT U.S. PORTS OF ENTRY

Some important interceptions that were reported by the Plant Quarantine Division, ARS, USDA, during November 1965, follow. These reports are based on identifications received from Federal taxonomists at the U.S. National Museum during the month, and include any of special interest from recent months that were not previously reported.

OAT CYST NEMATODE (Heterodera avenae) 23 times; at Seattle (13), Washington; New York (6), New York; Boston (1) Massachusetts; McGuire Air Force Base (1), New Jersey; San Diego (1) and San Francisco (1), California.

HEMP NETTLE CYST NEMATODE (Heterodera galeopsidis) 2 times from soil with one used automobile and one used tractor intended for entry at Seattle, Washington.

GRASS CYST NEMATODE (Heterodera punctata) 10 times; at New York (4) and John F. Kennedy International Airport (1), New York; McGuire Air Force Base (2), New Jersey; San Francisco (2), California; Boston (1), Massachusetts.

CABBAGE MOTH (Mamestra brassicae (L.)) 5 times in ships' stores; at Baton Rouge (1), Louisiana; Boston (1), Massachusetts; Corpus Christi (1), Texas; and Portland (2), Oregon.

AN OLETHREUTID MOTH (Matsumuraeses phaseoli (Mats.)) 4 times in ships' stores; at Portland (3), Oregon; Seattle (1), Washington.

A WEEVIL (Premnotrypes sp.) 3 times in potatoes in ships' stores; at Philadelphia (2), Pennsylvania; Charleston (1), South Carolina.

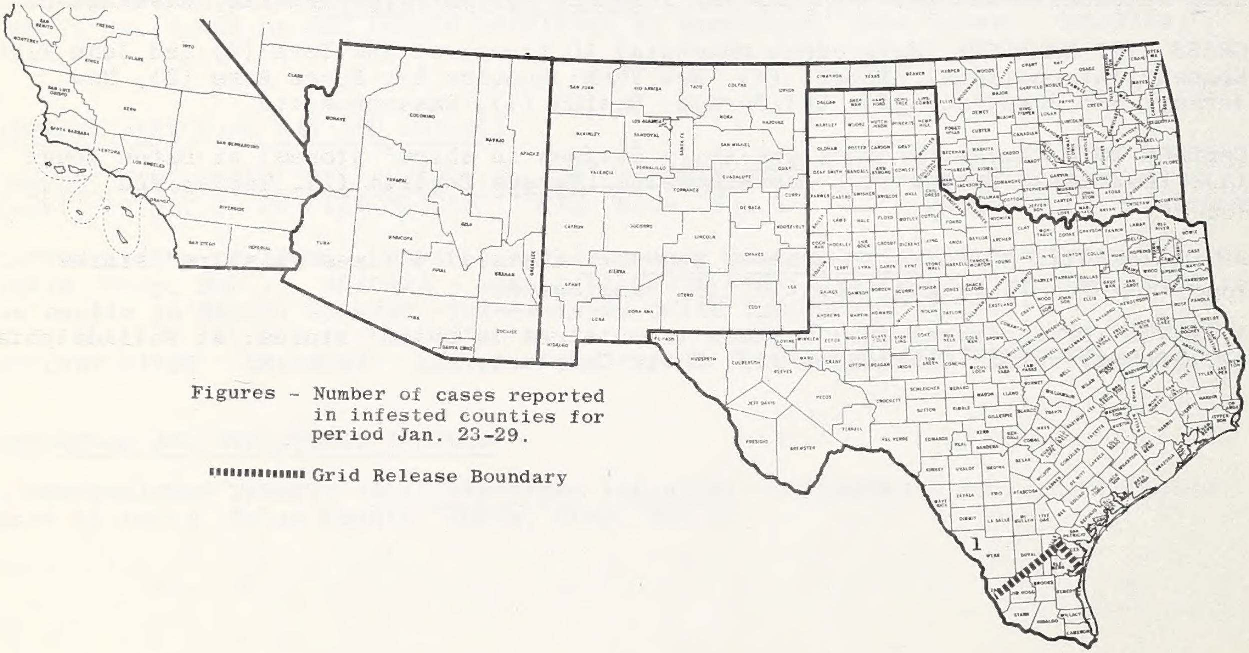
STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period January 23-29 the only case reported in the Southwestern Eradication area was in Webb County, TEXAS. The Republic of Mexico reported 48 cases as follows by State: Chihuahua 2, Sonora 11, Coahuila 2, Tamaulipas 14, Nuevo Leon 1, Territorio sur de Baja California 18. Sterile screw-worm flies released: Texas 11,486,250, Mexico 71,420,000.

	Positive Cases		Negative Cases		Ratio of Positive Cases to 100 Cases Negative	
Year	Current	Cumulative	Current	Cumulative	Current	Cumulative
Table 1. Comparison of specimens reported during corresponding week in 1964 and 1965 in Southwestern Eradication Area. (1966 area figures include cases reported from Arizona and/or California; 1965 figures reflect those from the 5-State area).						
1964	0	0	23	131	0.00	0.00
1965	1	4	54	287	1.85	1.39
1966	1	2	1	108	100.00	23.14
Table 2. Comparison of specimens reported during corresponding week and in a corresponding area in 1965 in the United States-Mexico Barrier Zone.*						
1965	24	220	32	168	75.00	130.95
1966	49	295	19	89	257.89	331.46

Feasibility Survey - During this period 204 cases were identified in Mexico south of the Barrier Zone as follows: Nayarit 15, Veracruz 44, Jalisco 8, Guanajuato 5, Yucatan 35, Michoacan 6, Campeche 4, Sinaloa 8, Morelos 2, Chiapas 27, Tabasco 19, Puebla 13, Colima 1, Guerrero 8, Oaxaca 5, San Luis Potosi 3, Durango 1.

* Barrier Zone - Area in which screw-worm eradication operations are being carried out in an effort to prevent establishment of self-sustaining screw-worm populations in the United States. (Anim. Health Div.).



Figures - Number of cases reported in infested counties for period Jan. 23-29.

▮▮▮▮▮▮▮▮▮▮ Grid Release Boundary

CORRECTIONS

CEIR 16(2):15 - CHINCH BUG (Blissus leucopterus) - MISSOURI - Should read "averaged 581 per square foot."

FACE FLY (*Musca autumnalis*) - UTAH - Specimens in museum indicate that this species was collected on July 14, 1964 by Dr. D. W. Davis from ultraviolet light trap at Logan, Cache County. Det. by W. J. Hanson. This record indicates that *M. autumnalis* was in State one year before date given in CEIR 15(30):833 and in CEIR 16(3):46. (Knowlton).

HOLLYHOCK WEEVIL (*Apion longirostre*) - UTAH - Mounted specimens at Utah State University collected July 12, 1964 at Providence, Cache County, by Dr. Bruce Wadley indicate that this species in State eleven months earlier than reported in CEIR 15(31):871 and CEIR 16(3):43. Damage to hollyhocks noted at that time. (Hanson, Knowlton).

LIGHT TRAP COLLECTIONS

GEORGIA (Tifton, 1/19-26; temp. 28-43°F.: precip. 2.6 in.; blacklight) - *Heliothis zea* 0, *H. virescens* 0, *Manduca quinquemaculata* 0, *M. sexta* 0.

TEXAS (Brownsville, 1/22-28; temp. 34-74°F.: precip. 0.51 in. 2 blacklight) - *Agrotis ipsilon* 9, *Feltia subterranea* 6, *Psuedaletia unipuncta* 40.

FEDERAL-STATE PLANT PROTECTION PROGRAMS

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - ALABAMA - Mound building presently more widespread than ever before in Shelby County. Growers report that ants congregated in heavy and extremely annoying numbers under corn overnight when crop was hand pulled and thrown into loading piles on ground during fall harvest. Loading of corn into wagons and trucks the following day became a serious problem for field hands. This same condition of large numbers congregating under bales of hay overnight likewise brought serious and annoying problems to field workers during late summer and fall. A county-wide control program by growers is being initiated. (Clark). FLORIDA - Adult stage collected in Citrus County January 26, 1966. This is a new county record. (Racine, Lynch).

INSECT DETECTION

FACE FLY (*Musca autumnalis*) - MISSOURI - Review of unpublished thesis reveals presence in Carroll and Chariton Counties in 1961. These are new county records. (Houser).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - See Florida note in Federal-State Plant Protection Programs.

STATUS OF *Anastrepha suspensa* IN FLORIDA

A fruit fly *Anastrepha suspensa* (Loew), normally found on the islands of Cuba, Puerto Rico, Hispaniola and Jamaica, was first found in the United States in Key West, Florida, in 1930. Surveys between 1930-37 revealed only 195 adults, 19 of which were taken on the mainland. No larvae were found outside of the Keys. Two additional flies were caught in 1959.

State and Federal investigations of the 1930 infestation included extensive surveys and an attempted eradication program. The program was abandoned in 1936 as being impractical when cooperating workers decided the insect offered no economic threat to citrus on the mainland, as no commercial citrus fruit was ever found infested.

Starting April 27, 1965, large numbers of adults were caught near the Miami International Airport in Miami, in McPhail traps in use for Mediterranean fruit fly surveys. Later surveys revealed as many as 360 adults in a single trap, and during the first three months more than 14,000 flies were caught in Dade County alone.

Following the recent discovery, extensive surveys were inaugurated by State and Federal workers to delimit the infested areas. The principal survey tools were McPhail traps baited with technical borax and cottonseed hydrolysate, and sticky board traps baited with cottonseed hydrolysate and Hy-Case, another protein food lure. Surveys revealed adults were present through December 31, 1965. Infestations were recorded in eight counties: Broward, Dade, Hendry, Indian River, Lee, Martin, Palm Beach and St. Lucie. None was recorded on the Keys or in Monroe County recently.

Careful and extensive observations have been made to evaluate the species' potential as a threat to the citrus and other commercial fruit. There have been no reports of damage to commercial fruit in Florida. The most recent list of recorded hosts is as follows:**Annona cherimola* (Jamaica-apple), *Annona squamosa* (sugar-apple), *Averrhoa carambola* (carambola), **Carica papaya* (papaya), **Carissa grandiflora* (Natal-plum), *Chrysobalanus icaco* (cocoplum), *Citrus aurantium* (sour orange), *Citrus mitis* (calamondin), *Citrus reticulata* (tangerine), *Citrus paradisi* (grapefruit), *Citrus sinensis* (sweet orange), *Dovyalis hebecarpa* (Ceylon-gooseberry), *Eriobotrya japonica* (loquat), *Eugenia uniflora* (Surinam-cherry), *Fortunella margarita* (Nagami kumquat), *Malpighia glabra* (Barbados-cherry), *Mangifera indica* (mango), *Momordica balsamina* (balsam-apple), *Pouteria campechiana* var. *nervosa* (egg-fruit), *Prunus persica* (peach (Ceylon)),* *Prunus* sp. (wild plum), *Psidium cattleianum* (cattley guava), *Psidium guajava* (common guava),**Spondias purpurea* (purple mombin), *Syzygium jambos* (rose-apple), *Terminalia catappa* (tropical-almond).

If needed, as a defensive measure, tests were made on several thousand acres using low volume malathion applied from the air. These tests confirmed this method as a safe and effective control.

Preliminary research has determined the feasibility of producing adult flies in the event it should become necessary to inaugurate a sterile fly program to control or eradicate this pest.

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* Caged hosts in Florida before 1965

SUMMARY OF INSECT CONDITIONS IN HAWAII - 1965

Submitted by the Hawaiian
Entomological Society [1]

Highlights

Numerous species were reported for the first time in the State during 1965, and some species that became established on certain islands in recent years spread to neighbor islands. Excellent progress in biological control of pests by recently introduced beneficial organisms was noted. Some important pests new to the State included a SUBTERRANEAN TERMITE (*Coptotermes vastator*), a STINK BUG (*Thyanta accerra*) and a new species of APHID (*Cupressobium maui*)[2] SOUTHERN GREEN STINK BUG (*Nezara viridula* var. *smaragdula*) caused moderate to heavy damage to truck crops on the islands of Maui and Hawaii. New infestations of GIANT AFRICAN SNAIL (*Achatina fulica*) were found on Kauai and Hawaii. Eradication attempts against a GRASSHOPPER (*Schistocerca vaga*) were discontinued. A WEEVIL (*Brachyrhinus cribricollis*) was found for first time on Maui and CUBAN-LAUREL THRIPS (*Gynaikothrips ficorum*) is now established on all major islands. Excellent control of the thrips by predators, especially an ANTHOCORID BUG (*Montandoniola moraguesi*), was noted throughout the State. A PUNCTURE-VINE STEM WEEVIL (*Microlarinus lypriformis*) gave excellent control of puncture-vine where released on Kauai, Maui and Oahu.

Cereal and Forage Insects

A BILLBUG (*Sphenophorus venatus vestitus*) was heavy on Tifton grass in Hilo, Hawaii, and in Waianae, Waipahu and Manoa, Oahu. THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) was heavy and PEA APHID (*Acyrthosiphon pisum*) was light on alfalfa at Kekaha, Kauai. An outbreak of a PHYCITID MOTH (*Cryptoblabes aliena*) occurred on sweet corn in experimental plots at Waimanalo Experiment Station, Oahu. SOUTHERN GREEN STINK BUG (*Nezara viridula* var. *smaragdula*) caused moderate damage to corn in Waimea, Hawaii. Moderate to heavy outbreaks of LAWN ARMYWORM (*Spodoptera mauritia acronyctoides*) occurred in Lahaina, Maui; Kapaa, Kauai; and in Kaneohe and Honolulu, Oahu. A SCOLYTID BEETLE (*Hypothenemus pubescens*), a pest of Bermuda grass first discovered on Maui in 1964, spread to the islands of Hawaii, Kauai and Lanai, and is now established on all major islands. SORGHUM MIDGE (*Contarinia sorghicola*) was common and important on sorghum varieties at University of Hawaii Agricultural Experiment Stations in Kapaa, Kauai and Makawao, Maui. A BILLBUG, probably *Sphenophorus venatus vestitus*, destroyed many primary shoots of plant cane on Kauai. This type of damage in field grown cane had not been noted previously. Attempted eradication of a GRASSHOPPER (*Schistocerca vaga*) on Sand Island, Oahu, was discontinued when surveys revealed the species on weeds near the road leading to Sand Island.

Fruit and Nut Insects

SOUTHERN GREEN STINK BUG caused slight damage to immature macadamia nuts in Kona, Hawaii, but damage ranged up to 23 percent on Oahu. Larvae of an OLETHREUTID MOTH (*Cryptophlebia ombrodelta*) caused considerable damage to litchi at Lawai, Kauai, with up to 60 percent damage to "nuts" reported by one grower. CHINESE ROSE BEETLE (*Adoretus sinicus*) was very active from sea level to 2,000 feet throughout Maui with heavy damage noted on Java-plum and apple. ORIENTAL FRUIT FLY (*Dacus dorsalis*) caused light to moderate damage to papaya, mango and avocado on Oahu.

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[1] Compiled by the Entomology Branch, Hawaii State Department of Agriculture, with the cooperation of the Department of Entomology, University of Hawaii; Entomology Department, Hawaiian Sugar Planters' Association; and Plant Pest Control Division, USDA; through the Hawaiian Entomological Society.

[2] Described by Bradley, G. A. 1965. Canad. Ent. 97(6): 668-670. Originally collected in State in 1962.

Sporadic outbreaks of BARNACLE SCALE (Ceroplastes cirripediformis) occurred in passion-fruit plantings and RED-BANDED THRIPS (Selenothrips rubrocinctus) ranged light to moderate on mango trees on Kauai. SPIREA APHID (Aphis spiraecola) was found for the first time in the State at Haleakala Crater on Maui.

Truck Crop Insects

MELON FLY (Dacus cucurbitae) heavily damaged tomatoes and cucurbits at Wailua and Kapaa, Kauai. LEEK MOTH (Acrolepia assectella) was heavy on onions at Lawai and Omao, Kauai. GREENHOUSE WHITEFLY (Trialeurodes vaporariorum) appeared in pest proportions on beans,tomatoes and cucumbers at Kalaheo, Lawai and Wailua on Kauai. CHINESE ROSE BEETLE heavily damaged beans throughout Maui, and SOUTHERN GREEN STINK BUG caused moderate to heavy damage to truck crops on Maui and Hawaii. On Maui, southern green stink bugs caused 50-90 percent damage to flower buds of passion-fruit at Keanae and Kahului, while damage to beans in the central part of that island varied 40-50 percent. On Hawaii, heavy populations of this stink bug caused moderate damage to tomatoes in Waiohinu, string beans and cabbage in Hamakua Coast and broccoli in Waimea. A slight buildup of a TARO LEAFHOPPER (Tarophagus proserpina) occurred at Hanapepe and Waimea, Kauai. A STINK BUG (Thyanta accerra) was reported for the first time in the State, being found on truck crops and weeds in Ewa and Hickam Air Force Base.

Forest, Ornamental and Shade Tree Insects

On the island of Hawaii, larvae of an OLETHREUTID MOTH (Crytophlebia ombrodelta) caused moderate to heavy terminal dieback of Indigo suffruticosa, a new host record, and damaged terminal shoots of Cassia occidentalis, in Kona. An ARADID BUG (Mezira membranacea) spread to Hawaii and was found on bark of Ohia trees in Kapoho. Larvae of a native TORTRICID MOTH (Enarmonia sp.) caused considerable dieback of terminal twigs of a rare native tree, Acacia koaia, in Kawaihae, Hawaii. A twig boring WEEVIL (Orthorhinus klugi) was discovered for the first time in the State on A. koaia in Kawaihae, Hawaii. A large APHID (Lachnus salignus) previously known only on the island of Hawaii, was found on Osteomeles anthyllidifolia in Haleakala Crater on Maui. A new species of APHID (Cupressobium maui) was found on Japanese cedar at Mahinahina Koa Grove, also on Maui. A NOCTUID MOTH (Phlegetonia delatrix), new to the State in 1964, was collected at lights at several locations on Ohau. A single specimen of this noctuid was taken in light trap in Hilo, Hawaii, early in 1965, and numerous adults were noted on Vitex trifolia along the shoreline at Mana, Kauai, late in the year. On Ohau, a WEEVIL (Syagrius fulvitarsus) damaged leatherleaf fern at Pauoa Valley, and larvae of a NOCTUID MOTH (Anomis flava), recently established in the State, was found on leaves of hibiscus and Hau in Honolulu, new host records. The eighteenth host of a twig boring SCOLYTID BEETLE (Xylosandrus compactus) was recorded during survey near Barbers Point, Oahu. The new host, Prosopis pallida, known as mesquite, kiawe or algaroba, grows in low coastal areas throughout the State. A TENEBRIONID BEETLE (Gonocephalum seriatum) caused considerable damage to terminal shoots and branches of Acacia melanoxylon at Waimea State Nursery, Hawaii. Although previously reported damaging potato seedlings and Ilima flowers, this is first reported damage to acacia. OLEANDER APHID (Aphis nerii) was found for the first time in the State during 1965 on oleander at Barbers Point, Ohau. Another APHID (Amphorophora vaccinii), previously reported only from Mauna Loa, Hawaii, heavily infested Vaccinium sp., a native plant, on Haleakala, Maui. ORCHID WEEVILS, Orchidophilus aterrimus and O. peregrinator, moderately damaged dendrobium and vanda orchids on Kauai. SOUTHERN GREEN STINK BUG moderately damaged hibiscus and orchids in Lanikai and Waialae-Kahala, Oahu. Two ARMORED SCALES found in the State for the first time during 1965 were Mycetaspis personata on ti leaf in Honolulu, and Neopinnaspis harperi on Gouldia terminalis at Puu Kohahuanui Trail, both on Oahu. A WEEVIL (Brachyrhinus cribricollis), new to the State in 1960, spread to Maui and caused 40 percent damage to chrysanthemum flower buds in Upper Kula.

Insects Affecting Man and Animals

BROWN DOG TICK (*Rhipicephalus sanguineus*) was troublesome in the Ewa-Barbers Point area, Oahu. Swarms of a VESPID WASP (*Polistes* sp.) caused residents to complain of annoyance and stings at various locations on Oahu. Large numbers of this wasp were reported from the Kokee Tracking Station, Kauai. MOSQUITO populations, especially *Culex pipiens quinquefasciatus* and *Aedes vexans nocturnus*, "exploded" late in the year after heavy rains and flooding. Heavy populations of NORTHERN CATTLE GRUB (*Hypoderma bovis*) were reported on Maui. New bovine and poultry pests included LONG-NOSED CATTLE LOUSE (*Linognathus vituli*) on calves at Kipu Ranch, Kauai, and NORTHERN FOWL MITE (*Ornithonyssus sylviarum*) on chicks at Mokuleia, Oahu. HONEY BEE (*Apis mellifera*) continued annoying homeowners on Oahu by nesting in double walls.

Household and Structural Insects

FORMOSAN SUBTERRANEAN TERMITE (*Coptotermes formosanus*) and a POWDER-POST TERMITE (*Cryptotermes brevis*) continued to cause considerable economic loss to many homeowners on Oahu. On Maui, free of *C. formosanus* prior to 1964, eradication measures are now underway in Wailuku and Waikapu. PACIFIC DAMPWOOD TERMITE (*Zootermopsis angusticollis*) was found in Douglas-fir lumber in Hilo, Hawaii, and in Honolulu, Oahu. A SUBTERRANEAN TERMITE (*Coptotermes vastator*) was found for the first time in the State in a building in the Kaimuki section of Honolulu, Oahu. ARGENTINE ANT (*Iridomyrmex humilis*) was troublesome in dwellings throughout Kauai.

Beneficial Insects

A predaceous ANTHOCORID BUG (*Montandoniola moraguesi*), introduced from the Philippines in 1964 and released on Oahu and Kauai for control of *Gynaikothrips ficorum* (Cuban-laurel thrips), spread to Maui, Hawaii and Molokai. Considerable reduction in thrips populations occurred on all 5 islands as a result of predation by *M. moraguesi*. Two parasites, a TACHINA FLY (*Trichopoda pennipes*) and a SCELIONID WASP (*Telenomus basalis*), became established on all major islands and reduced populations of southern green stink bug. A parasitic PTEROMALID WASP (*Spalangia endius*), introduced from California in 1964 for control of *Musca domestica* (house fly) was recovered for first time in Ewa, Oahu. In Hanapepe and Waimea, Kauai, a MIRID BUG (*Cyrtorhinus fulvus*), predaceous on eggs of *Tarophagus prosperpina*, aided in preventing a heavy buildup of this pest. Two BRACONID WASPS, *Bracon* n. sp. and *Agathis* n. sp., were introduced from Texas for control of *Ithome concolorella* (a Kiawe moth). An impressive buildup of a CERAMBYCID BEETLE (*Plagiohammus spinipennis*), a stem borer of lantana, occurred at Kukui Paddock, Hawaii, and 2 NOCTUID MOTHS (*Hypena strigata* and *Syngamia haemorrhoidalis*) and LANTANA LACE BUG (*Teleonemia scrupulosa*) controlled lantana in many localities throughout the State. A HISPID BEETLE (*Uroplata girardi*) was recovered for first time on Oahu at Mt. Tantalus. This lantana leaf mining beetle was introduced from Brazil in 1961 and is well established in Lawai Valley, Kauai. A CECIDOMYIID MIDGE (*Zeuxidiplosis giardi*) from New Zealand and a KLAMATH-WEED BEETLE (*Chrysolina quadrigemina*) from California were released on Mt. Hualalai, Hawaii, for control of *Hypericum perforatum* (Klamath-weed). Both are spreading from original release point and appear very promising. PUNCTURE-VINE WEEVILS (*Microlarinus* spp.) reduced *Tribulus cistoides* (a puncture-vine) in West Kauai, and on Maui, 95 percent of this noxious plant was destroyed in Kihei and Puunene. *M. lypriformis* is the stem-boring species and *M. lareynii* is the seed-boring species. The range of a HELIODINID MOTH (*Schreckensteinia festaliella*), introduced from California for control of *Rubus* sp. (blackberry), was considerably extended in Olina, Maui, and in Kokee, Kauai. A TORTRICID MOTH (*Aptoforma* sp.), introduced from Mexico for the control of *Rubus* sp., became established in Olinda, Maui, and subsequently released in Kokee, Kauai. A stem-boring WEEVIL (*Apion antiquum*) caused 100 percent dieback of *Emex australis*, a rangeland weed, from Waiakoa to Pukalani, Maui. An ARCTIID MOTH (*Selca brunella*) from Malaysia was released in Panaewa Forest Reserve, Hawaii, for control of *Melastoma malabathricum* (Indian-rhododendron). A SCIOMYZID FLY (*Sepedon macropus*), introduced from Nicaragua for control of *Lymnaea ollula* (cattle liver fluke snail) in 1958, was very active throughout 1965 on Kauai in all low lying, wet areas, particularly in taro fields.

Miscellaneous Pests

New infestations of GIANT AFRICAN SNAIL (Achatina fulica) were found in Kona, Hawaii, and in Poipu, Kauai, where intensified efforts to eradicate these are in progress. A GEOMETRID MOTH (Cosymbia serrulata), collected at light for the first time in Honolulu, Oahu, and later on Maui and Hawaii during 1964, spread to the island of Kauai in 1965. Larvae of C. serrulata were found feeding on flowers of Prosopis pallida, Acacia farnesiana and Leucaena glauca. Other species reported during 1965, all on Oahu, included a SAP BEETLE (Carpophilus oculatus) in unidentified seeds from various localities; and an ENSIGN SCALE (Nipponorthezia guadalcanalia) from leaf litter on Mt. Tantalus; a CERAMBYCID BEETLE (Phorocantha semipunctata) in widely scattered areas; and a single specimen of a PLATASPID BUG (Coptosoma xanthogramma) at light in Honolulu. C. xanthogramma has since been collected from Ainakoa to Aiea Heights, Honolulu, and found damaging growing tips and young tendrils of Canavalia microcarpa (Maunaloa) and blossoms of Strongylodon macrobotrys (jade-vine).

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